

REMARKS

Claims 1-72 are rejected. Claims 1, 11, 19, 29, 37, 47, 55, and 65 have been amended herein. Applicants believe that the present application is in condition for allowance, which prompt and favorable action is respectfully requested. Entry of this amendment and further examination of the present application are hereby requested.

1. Amendments

Each independent claim has been clarified by explaining that short-slot-cycle paging occurs at an interval less than the slot cycle. Basis for this clarification is found for example in paragraphs [0043]-[0046] and Figs. 5 and 6 of the application where a slot cycle is exemplified as having a time period of 1.28 seconds (16 slots of 0.08 sec. each) and short-slot-cycle-paging is exemplified as paging that occurs at an interval less than 1.28 sec., e.g., 0.08 sec., 0.16 sec., 0.32 sec. or 0.64 sec..

The preamble of claim 29 has been harmonized with the preamble of claim 19 and a typographical error has been corrected in claim 19.

The fourth SLOT CYCLE_INDEX value in Table 1 of the specification has been corrected to read “110” instead of “100.” The typographical error is believed to be readily apparent to those having skill in the art.

No new matter has been introduced by the amendments.

The amendments to the claims are timely as they merely clarify the previous claim language and do not raise any new issues. As mentioned the amendment to Table 1 corrects a typographical error that would be readily apparent to those having skill in the art.

2. Rejection of independent claims 1, 11, 19, 29, 37, 47, 55 and 65¹ under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent 7, 047,065 (Kinnavy)

The rejection asserts that Kinnavy allegedly teaches each element of these independent claims. Applicants respectfully traverse the rejection.

Anticipation is an exacting standard. Under 35 U.S.C. § 102, every limitation of a claim must identically appear in a single prior art reference for it to anticipate the claim. *In re Bond*, 910 F.2d 831, 832, 15 USPQ2D 1566, 1567 (Fed. Cir. 1990). Implicit in a review of an examiner's anticipation analysis is that the claim must first have been correctly construed to define the scope and meaning of each contested limitation. See, e.g., *In re Paulsen*, 30 F.3d 1475, 1479, 31 USPQ2D 1671, 1674 (Fed. Cir. 1994) ("To properly compare [an allegedly anticipatory prior art reference] with the claims at issue, we must construe the term 'computer' to ascertain its scope and meaning.").

Applicants' claims are generally directed for providing short-slot-cycle paging information between a communication device (CD) and a base station (BS). Specifically, independent claim 1 recites a method wherein the CD provides the feature of short-slot-cycle paging information to a BS comprising "determining whether the BS is capable of short-slot-cycle paging; and indicating that the CD is also capable for short-slot-cycle paging if the BS is determined to be capable of short-slot-cycle paging." Similarly, claim 11 recites a method wherein the BS indicates the feature of a short-slot-cycle paging information to a CD comprising "indicating to a communication device (CD) that the BS is capable of short-slot-cycle paging, receiving information from the CD, indicating that the CD is also capable for short-slot-cycle

¹ It is noted that the Examiner did not include claims 29 and 37 in the heading of this rejection but did refer to claim 37 but not claim 29 in the body of the rejection on page 2 of the Final Rejection. It does not appear that claim 29 is included in any of the rejections set forth in the Final Rejection. Since the cover sheet of the Final Rejection states that claims 1-72 are rejected it is assumed that the omission of claim 29 and 37 from this rejection was an inadvertent error and that the Examiner intended to include these claims in this rejection.

paging; and paging the CD based on the received information.” This in general aids in shorter call setups. See Para. [0043].

In reading the claims it is important to understand that short-slot-cycle-paging occurs at an interval less than the slot cycle. Hence the term “short-slot cycle-paging.” While the plain meaning of this phrase would be well understood to one of ordinary skill in the art, especially when the phrase is read in light of the specification, language has been added to the claims to clarify the meaning of the phrase. While the added language may be considered redundant, it is believed to overcome the Examiner’s concern regarding the purported improper reading of limitations from the specification into the claims set forth at page 9 of the Final rejection.

As discussed below, Kinnavy simply does not teach or suggest the feature of communicating the capability of short-slot-cycle paging between a CD and BS. In fact, Kinnavy simply teaches the use of the quick-paging channel (QPCN) to preserve battery life and never mentions or discloses a short-slot-cycle paging.

Slot cycle arrangements are well known in the art, for instance, generally known as a setting that controls the length of a slot. A slot is defined as $(1.28 \text{ seconds})^*(2^{\text{slot cycle}})$. So if slot cycle 0 is 1.28 seconds, then slot cycle 1 is 2.56 seconds, slot cycle 2 is 5.12 seconds, etc. Fig. 5 shows an embodiment of a slot cycle arrangement where a slot cycle of 1.28 seconds further consists of 16 slots of 0.08 seconds each. As well known in the art, a CD is typically assigned a slot within the slot cycle and wakes up every 1.28 seconds to check that particular slot. Therefore, using Fig. 5 as a reference, a CD that was assigned slot 3 in a slot cycle of 1.28 seconds, would wake up every 1.28 seconds, offset 240 MSEC from the start of each slot cycle. However, the general advantage of a shorter slot cycle is the phone gets more chances to receive

a page, but this makes the phone use more power, therefore it is less favorable for those that wish to conserve power. A short-slot cycle arrangement, as encompassed by the claims, is a fast call setup mode of the mobile station ("MS") and Group Communications Device ("CD"). Referring to Paras. [0043]-[0046], Figs. 5-6 and table 1 of the app, it states that

"As discussed above, for some applications, such as group call services, shorter call set ups are required. In one embodiment, SCI (SLOT_CYCLE_INDEX) takes negative values, such as -1, -2, -3, and -4. Negative SCI values shorten paging delays and hence call set up delays. FIG. 6 illustrates a flow diagram for providing short-slot-cycle paging in a base station. BS may advertise its capability of negative slot-cycle-index paging to the target CDs ... to indicate whether BS supports negative slot-cycle-index paging. In step 604, the BS that supports negative slot-cycle-index paging receives and interprets the WLL_INCL field ... In step 606, if the WLL_INCL field is set to "1" in the received registration message, origination message, or page response message, indicating that the CD that sent one of these messages is also capable of negative slot-cycle-index paging, the BS interprets the slot-cycle-index value as being negative, as shown in Table 1 ... Otherwise, if the received slot cycle index has a decimal value of 0, 1, 2, 3, or 4, the BS interprets the received slot-cycle-index value as being negative, in step 612. A slot-cycle-index value of -1 causes the BS to page the target CD every eight slots, or every 0.64 seconds. A slot cycle index value of -2 causes the BS to page the target CD every four slots, or every 0.32 seconds. A slot cycle index value of -3 causes the BS to page the target CD every two slots, or every 0.16 seconds. A slot cycle index value of -4 causes the BS to page the target CD every slot, or every 0.08 seconds, providing a relatively shorter slot cycle paging."

Table 1 clearly shows an interpretation of the WLL_INCL field to force the BS to page the CD at a quicker rate than ordinarily done, which is the short-slot cycle as presented. Therefore, as defined in this app and called for by the claims a short-slot cycle is a cycle that may encompass two or more "sub" slots within the generally known single slot of 1.28 seconds. For instance, referring to Fig. 5, in a short-slot cycle a CD might be assigned slots 3 and 11, wherein the CD would wake up every 64 MSEC to check the paging channel.

Kinnavy discloses a method and a mobile station for enabling a preferred slot cycle wherein a negotiation occurs between the mobile station and the base station, wherein

"the internal SCI may be pre-stored in the mobile station 160 whereas the broadcasted SCI may be provided by the base station 140. Typically, the mobile station 160 determines an operating SCI using the minimum of the internal SCI and the broadcasted SCI to control call setup time. For example, the mobile station 160 may have an internal SCI of three (3) and receive a broadcasted SCI of one (1). Thus, the operating SCI for the mobile station 160 may be one (1) because the broadcasted SCI of one (1) is less than the internal SCI of three (3). Accordingly, the operating slot cycle corresponding to the operating SCI of one (1) is 2.56 seconds as one of ordinary skill in the art will readily recognize, i.e., operating slot cycle may be $2^n \times 1.28$ (sec), where n is the operating SCI. As a result of the operating SCI being one (1), the mobile station 160 monitors for transmission from the base station 140 during a slot that reoccurs every 2.56 seconds. Col. 4, lines 23-38.

Further,

"For example, the mobile station 160 may enable a preferred SCI of four (4), which may correspond to a preferred slot cycle of 20.48 seconds, to conserve battery power of the mobile station 160 rather than using a lower operating SCI (i.e., an operating SCI of three (3) or less). The mobile station 160 transmits the preferred SCI to the base station 140 via a reverse control channel 220 (e.g., a reverse access channel (R-ACH)) to indicate that the mobile station 160 is operating at the preferred slot cycle associated with the preferred SCI. As a result of informing the base station 140 with the preferred SCI, the mobile station 160 is in communication with the base station 160 via the communication resource 210 during a slot that reoccurs based on the preferred slot cycle. Thus, in the example described above, the mobile station 160 monitors for transmission from the base station 140 via the communication resource 210 during a slot that reoccurs every 20.48 seconds." Col. 4, line 58 ~ Col. 5, line 8.

Clearly, the mobile station and the base station adjust the operating SCI to the preferred SCI and communicate the change to each other. However, Kinnavy simply does not discuss the use of the paging channel for short-cycles, specifically short-slot cycles as set forth in the claims. Kinnavy simply makes use of well-known paging cycles, as disclosed in Col. 1, lines 59-55, and Col. 4, lines 50-62. There is nothing to indicate the feature of a short-slot cycle, wherein, for

instance, a slot-cycle-index value of -1 causes the BS to page the target CD every eight slots, or every 0.64 seconds. This would be twice as often as a standard slot of 1.28 seconds as discussed in standards and in Kinnavy. Therefore, Kinnavy simply does not disclose the features of either “determining whether the BS is capable of short-slot-cycle paging” or “receiving information from the CD, indicating that the CD is also capable for short-slot-cycle paging.”

Similarly, Kinnavy does not disclose any mechanism by which to determine if either the BS or the CD is capable of short-slot-cycle paging, as required by the claims. Since Kinnavy simply provides an indicator for well-known SCI slot numbers, there is no need to determine if the BS or the CD are actually capable of providing the defined short-slot-cycle paging. In fact, there is no enabling feature disclosed or suggested as to how the BS and the CD would provide for a short-slot-cycle paging as required by the claims.

The Examiner states at pages 8-9 of the Final Rejection that a user of Kinnavy’s system “may select a preferred SCI that is less than the operating SCI such that the preferred slot cycle is shorter than the operating slot cycle.” However, it must be understood that Kinnavy’s system uses multiples of a slot cycle having an interval of 1.28 sec., not intervals that are less than the slot cycle of 1.28 sec.. The Examiner appeared to understand this since the Examiner recognized that the subject application “(...explains the ‘short-slot-cycle’ term which is different tha[n] the conventional ‘short-slot-cycle’)” but believed that the “different” short-slot-cycle was not recited in the claims. Final Rejection, page 9. Having clarified the claim language, it is believed that the Examiner’s concerns have been overcome.

For all the above reasons, Applicants’ respectfully submit that Kinnavy does not describe all the elements of the independent claims.

3. Rejection of claims 2, 12, 20, 30², 38, 48, 56 and 66 under 35 U.S.C. § 102(e) as allegedly anticipated by Kinnavy

The Examiner states that Kinnavy “inherently teaches a method...including setting a negative slot-cycle-index value for said short-slot-cycle paging (col 3 lines 3-35).” Final Rejection, page 3.

It is well established that inherency cannot be established based upon probabilities or possibilities. The mere fact that a certain thing may exist from a given set of circumstances is not sufficient. *In re Robertson*, 169 F.3d 763 (Fed. Cir. 1999). Here, the Examiner has failed to establish that Kinnavy inherently describes the limitations of these claims.

The portion of Kinnavy cited in support of the inherency assertion merely describes positive slot-cycle-index values, not negative slot-cycle-index values. The positive slot-cycle-values of Kinnavy are positive multiples of the operating slot cycle of Kinnavy which is stated to be 2⁸ x 1.28 (sec). Kinnavy, col. 4, lines 29-63.

For the reasons set forth above in regard to the independent claims and the reasons set forth above, Applicants’ respectfully submit that Kinnavy does not describe all the elements of these claims.

4. Rejection of claims 3, 21, 31, 39, 49, 57 and 67 under 35 U.S.C. § 102(e) as allegedly anticipated by Kinnavy³

² It is believed that the Examiner intended to reject claim 30, not claim 33 in this portion of the rejection at page 3 of the Final Rejection.

³ It is not clear why the Examiner included claims 31, 49, and 67 in this portion of the rejection at page 3 of the Final Rejection as these claims do not contain the limitation addressed in the rejection.

The Examiner states that Kinnavy "inherently teaches...wherein the negative slot-cycle-index value includes one of '-1,' '-2,' '-3,' or -4,'" citing column 4, lines 39-67 of Kinnavy.

It is well established that inherency cannot be established based upon probabilities or possibilities. The mere fact that a certain thing may exist from a given set of circumstances is not sufficient. *In re Robertson*, 169 F.3d 763 (Fed. Cir. 1999). Here, the Examiner has failed to establish that Kinnavy inherently describes the limitations of these claims.

The portion of Kinnavy cited in support of the inherency assertion merely describes positive slot-cycle-index values, not the negative slot-cycle-index values required by these claims.

For the reasons set forth above in regard to the independent claims and the reasons set forth above, Applicants' respectfully submit that Kinnavy does not describe all the elements of these claims.

5. Rejection of claims 8, 16, 26, 34, 44, 52, 62 and 70 under 35 U.S.C. § 102(e) as allegedly anticipated by Kinnavy

This rejection is not understood. None of these claims depend directly from their respective independent claim. Rather they depend from a previous dependent claim. For example, claim 8 does not directly depend from claim 1, rather it depends from claim 7 which in turn depends from claim 1. Claim 7 is not subject to the anticipation rejection so it is not clear why claim 8, and the other similar claims, are subject to this rejection. In setting forth the rejection the Examiner states that "Kinnavy inherently teaches a method of claim 7," Final Rejection, page 3, yet did not include claim 7 in the anticipation rejection. Rather, it appears

that the Examiner's intention is to include claim 7 and the other similar claims in the obviousness rejection set forth on pages 4-5 of the Final Rejection. Clarification is needed.

The Examiner did not make a finding where or how Kinnavy allegedly inherently describes the method of claim 7. Thus, absent further clarification from the Examiner as to the factual basis for these assertions, a reasoned response cannot be made. The rejection should be withdrawn.

6. Rejection of claims 6, 9, 10, 17, 18, 24, 27, 28, 35, 36, 45, 46, 53, 54, 63, 64, 71 and 72 as allegedly obvious over Kinnavy

It is first noted that the Examiner provides a rationale why claims 7, 15, 25, 33, 43, 51, 61, and 69 are allegedly obvious but does not include the claims in the statement of the rejection at page 4 of the Final Rejection. This is believed to be an inadvertent error on the part of the Examiner and that these claims are part of the rejection and thus will be responded to.

The Examiner has taken "official notice" in regard to the requirements of these claims. For example, claim 6 and similar claims require examination of whether AUTO_MSG_SUPPORTED field is set to "1." The Examiner takes "official notice that designing [sic?, designating?] different fields and setting different number[s] is a programmer choice." To the extent the systems described by Kinnavy contain an AUTO_MSG_SUPPORTED field, the Examiner has not explained why it would have been obvious to set that field to a value of "1" and include that field as part of determining whether a CD or BS is capable of short-slot-cycle paging as required by the claims. In other words, the fact that a programmer may set values in fields does not mean that the specific values required by the claims subject to this rejection would have been obvious.

Withdrawal of the rejection is courteously solicited.

7. Rejection of claims 4, 5, 13, 14, 22, 23, 31, 32, 40, 41, 58, 59, and 68 under 35 U.S.C.

§103(a) as allegedly obvious over Kinnavy and US 2004/0179492 (Zhang)

The Examiner states at page 6 of the Final Rejection:

Regarding claims 4, 13, 22, 31, 40, 50, 58, Kinnavy fails to teach a method of claim 1, wherein said determining includes examining system parameter messages including extended system parameter messages (ESPM). However, Zhang teaches determining includes examining system parameter messages including extended system parameter messages (ESPM) (0314). Therefore, it would have been obvious to ordinary skill in the art at the time the invention was made to combine the above teaching of Zhang with Zhang, in order to provide reduction of over head and caused by location update and to enable efficient paging.

Assuming the Examiner intends to combine Kinnavy with Zhang instead of Zhang with Zhang as stated, it is not clear exactly how the Examiner would combine Kinnavy with the disclosure of paragraph [0314] of Zhang or how any proposed combination would “provide reduction of “over head and caused by location update and to enable efficient paging” as asserted. Absent additional fact finding and clarification of the reasoning by the Examiner this rejection a meaningful response cannot be made.

The rejection of claims 5, 14, 23, 32, 41, 59, and 68 set forth on pages 6-7 of the Final Rejection suffer from the same infirmities. Clarification of this rejection is also needed.

8. Response to Examiner's comments

It is believed that the Examiner's comments set forth at pages 7-9 of the Final Rejection are based upon a misunderstanding of the claim scope. “[A]s an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their

ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." In re Morris, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). Here, the Examiner read the claims in a vacuum and did not take into account the enlightenment provided in the specification as to the term "short-slot-cycle paging" as it is used in the claims, nor read them as a person having ordinary skill in this art. Reading the claims in light of the specification shows that short-slot-cycle paging of this application is different from the adjustment of the slot cycle index described in Kinnavy. While it is urged that the unamended claims were misread by the Examiner, Applicants have clarified the claim language so that there should be no further dispute that the present claims are neither anticipated by Kinnavy nor rendered obvious by Kinnavy, with or without Zhang.

CONCLUSION

In light of the amendments contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

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